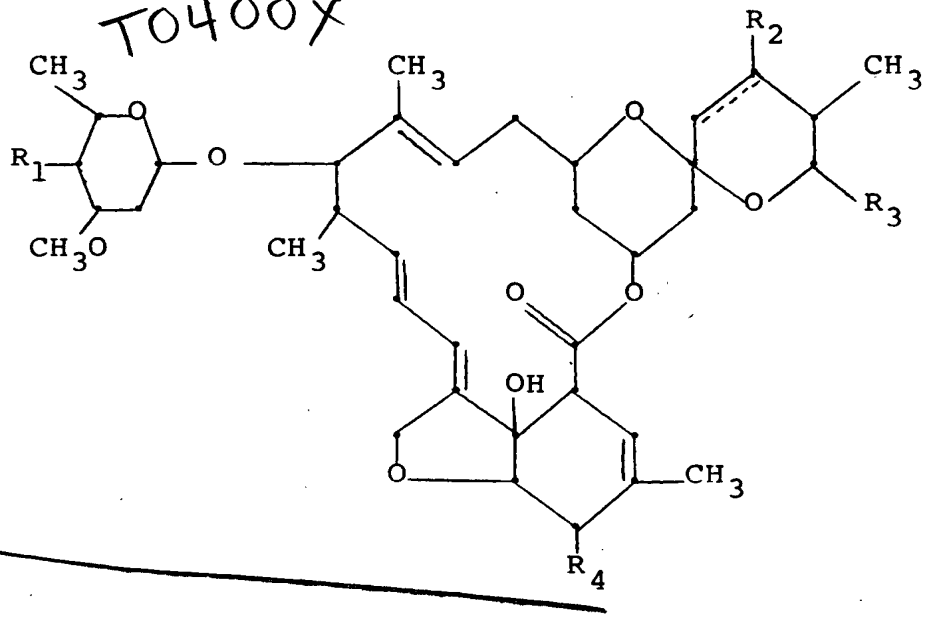
CM

WHAT IS CLAIMED IS:

1. A compound having the formula:

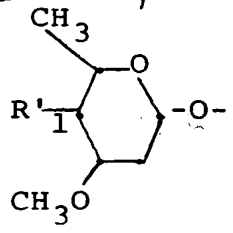
T0400X



PS

wherein R_1 is $\overset{5'}{=}O$, $\overset{5'}{-}NR_5R_6$ or

B T0401X



PS P1 wherein R_1 is $\overset{5'}{=}O$ or $\overset{5'}{-}NR_5R_6$:

R_5 and R_6 are independently hydrogen, loweralkyl, loweralkanoyl, substituted benzenesulfonyl wherein the substituent is halogen; or loweralkyl sulfonyl;

P1 R_2 is hydrogen or hydroxy;

L R_3 is sec-butyl or iso-propyl;

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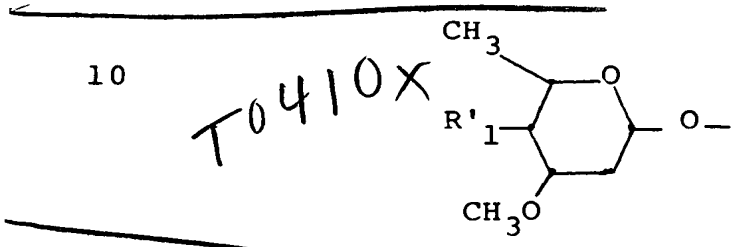
R_4 is hydroxy or methoxy;
and the broken line indicates a single or a double bond at the 22,23-position provided that R_2 can only be hydroxy when the broken line indicates a single bond.

2. The compound of claim 1 wherein R_1 is:



and R'_1 is =O, or NR_5R_6 wherein R_5 and R_6 are independently hydrogen, methyl or acetyl.

3. The compound of claim 2 wherein R'_1 is =O.

4. The compound of claim 3 which is 4"-keto-avermectin Bla/Blb.

5. The compound of claim 3 which is 4"-keto-22,23-dihydro avermectin Bla/Blb.

6. The compound of claim 2 wherein R'_1 is NR_5R_6 and R_5 and R_6 are independently hydrogen, methyl or acetyl.

7. The compound of claim 6 which is 4"-deoxy-4"-amino-avermectin Bla or Blb.

8. The compound of Claim 6 which is 4"-deoxy-4"-amino-22,23-dihydro-avermectin B1a or B1b.

9. The compound of Claim 6 which is 4"-deoxy-4"-acetylamino-avermectin B1a or B1b.

10. The compound of Claim 6 which is 4"-deoxy-4"-acetylamino-22,23-dihydro avermectin B1a or B1b.

11. The compound of Claim 6 which is 4"-deoxy-4"-N,N-dimethylamino-avermectin B1a or B1b.

12. The compound of Claim 6 which is 4"-deoxy-4"-N,N-dimethylamino-22,23-dihydro avermectin B1a or B1b.

13. A process for the preparation of the compounds of Claim 1 wherein R_1 or R'_1 is =O which comprises treating a compound wherein R_1 or R'_1 is hydroxy with dimethyl sulfoxide and oxalyl chloride or trifluoroacetic anhydride, or with N-chlorosuccinimide and dimethylsulfide.

14. A process for the preparation of a compound of Claim 1 wherein R_1 or R'_1 is $-NR_5R_6$ wherein R_5 and R_6 are as defined in Claim 1 which comprises treating the corresponding compound wherein R_1 or R_1' is =O with an ammonium salt or methyl ammonium salt and a reducing agent and optionally treating the thus produced 4"-deoxy-4"-amino-or 4'-deoxy-4'-amino compound with an acylating

agent in the presence of a base to produce the 4"-deoxy-4"-acylamino and 4'-deoxy-4'-acylamino compound or optionally treating the amino compound with aqueous formaldehyde and a reducing agent under acidic conditions to produce the corresponding 4"-deoxy-4"-N,N-dimethylamino and 4'-deoxy-4'-N,N-dimethyl-amino compounds.

15. The process of Claim 14 wherein the salts used are the acetate, propionate or benzoate, and the reducing agent is sodium cyano borohydride.

16. The process of Claim 15 wherein the salt used is the acetate.

13. A method for the treatment of helminthiasis which comprises administering to an animal infected with helminths an effective amount of a compound of Claim 1.

14. A composition useful for treating animals infected with helminths which comprises an inert carrier and an effective amount of a compound of Claim 1.

19. A method for the treatment of bacterial infections which comprises administering to an animal infected by bacteria, an effective amount of a compound of Claim 1 wherein R_1 or R'_1 is $-NR_5R_6$ and R_5 and R_6 are as defined in Claim 1.

20. A composition useful for treating bacterial infections which comprises an inert carrier and a compound of Claim 1 wherein R_1 or R'_1 is $-NR_5R_6$ and R_5 and R_6 are as defined in Claim 1.